GRINDLUX 4000

Operator´s manual

Please read these instructions carefully and make sure you understand them before using the machine.

INTRODUCTION

Introduction

This operator's manual describes in detail how the bandsaw blade grinder is used and maintained and how servicing is to be carried out. It also describes the measures to be taken for maximum safety and how the safety features are designed and function, as well as how they are inspected, maintained, and repaired if necessary.

NOTE! The section dealing with safety must be read and understood by all those who install, use, or repair the sawmill.

The operator's manual comprises installation, usage, and the different maintenance procedures that can be performed by the operator. More comprehensive servicing or troubleshooting should be performed by the dealer's service personnel.

The operator's manual describes all the requisite safety features and should be read and understood by the user before the sawmill is assembled.

Symbols and warning signs shown on this page can be found in this operator's manual and on the one-man sawmill. If a decal on the sawmill has been damaged or is worn, a new warning decal must be applied as soon as possible in order to ensure the greatest possible safety when using the sawmill.

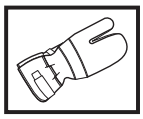
The bandsaw blade grinder shall only be used for bandsaw blades with hardened saw teeth. The pitch shall be 25 mm and the bandsaw blade width shall be 32 mm.

KEY TO SYMBOLS

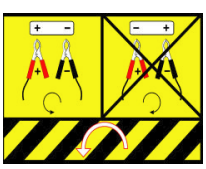
Symbols

The symbols below are used in this operator's manual.

Eye protection should be used.



Protective gloves should be worn.



Polarity reversal of the bandsaw blade grinder when connected to a 12-volt battery.

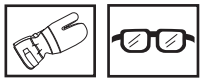
Warning Signs

The decal with the symbols below is found on the bandsaw blade grinder.

Read this manual carefully and make sure you understand it before attempting to use the bandsaw blade grinder.

Exercise caution.

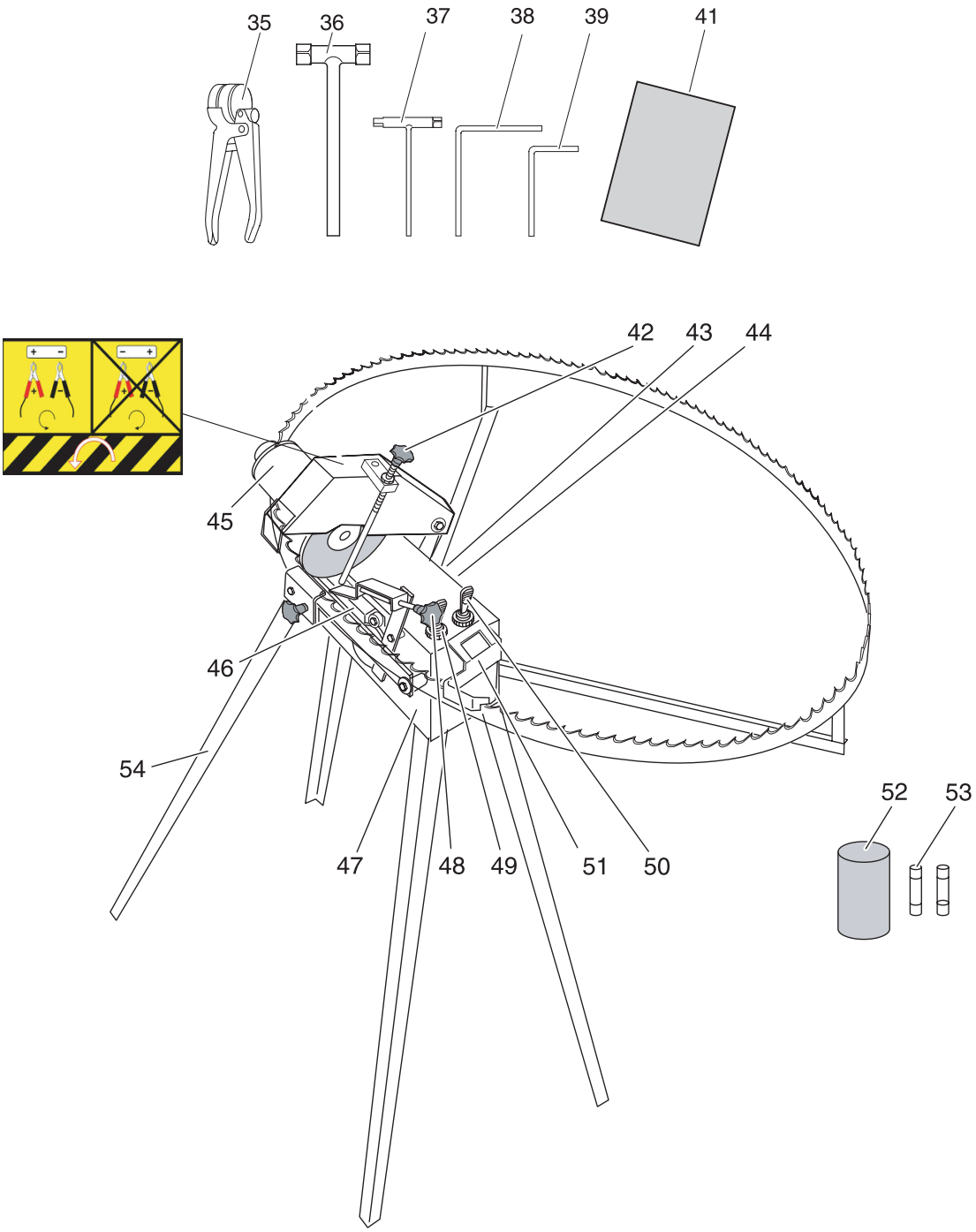
Grinder



The following safety regulations apply to the grinder:

- Do not store petrol in the vicinity of the grinder. Sparks from the grinding disc or the electrical connection can ignite.
- The bandsaw blade is sharp and can cause cuts. Warning for personal injury. Wear protective gloves whenever you handle the bandsaw blade!
- The grinding disc must not be running when adjusting the grinder.
- The grinding disc can come loose and cause personal injury if it rotates in the wrong direction.
- Check that the grinding disc shows no signs of cracking and that it is secured to the spindle. Stop the grinding disc immediately if abnormal vibrations occur.
- Wear protective glasses while grinding!

DESCRIPTION



Bandsaw Blade Grinder

42. Grinding depth adjuster
43. Cutting angle lock
44. Pin for securing the cutting angle
45. Grinder motor
46. Feed mechanism
47. Fixed section
48. Feed position adjuster
49. Feed switch
50. Grinding disc switch
51. Stop pin
52. Whetstone
53. Bandsaw blade grinder fuses
54. Frame

Tools and operator's manual

35. Saw setting pliers
36. Spark plug spanner
37. Combination spanner
38. Allen key 4 mm
39. Allen key 5 mm
40. This operator's manual

Grinder

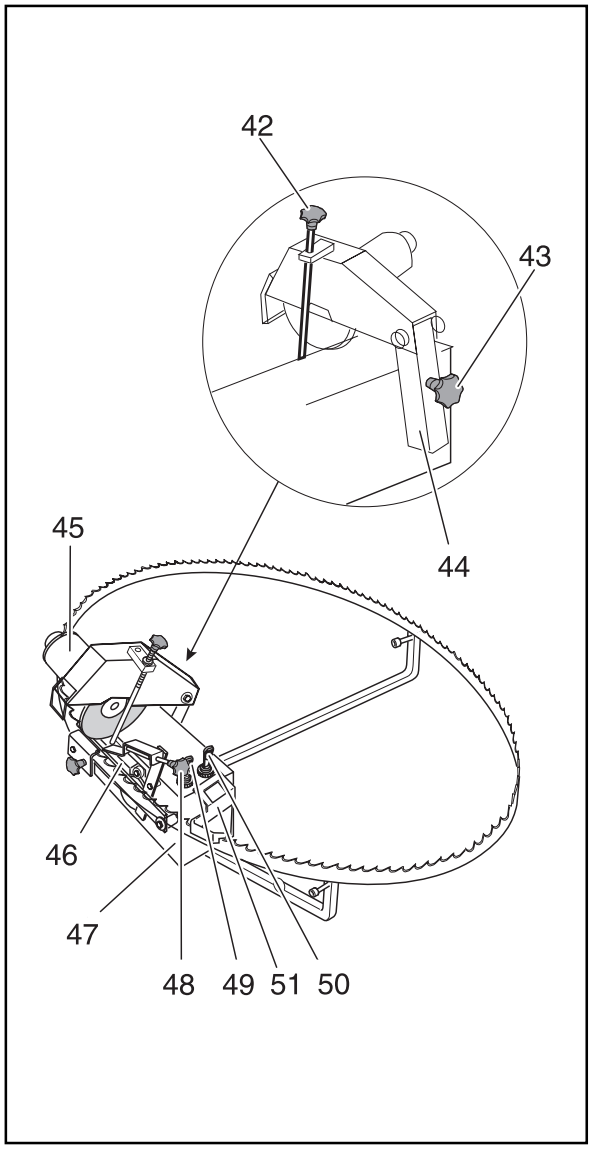
The grinder consists of the following parts:
- A fixed section.
- Grinder motor.
- Feed mechanism.

The fixed section houses a motor for the bandsaw blade feed and three folding support arms, which form a stable platform for the grinder set-up. The support arms also secure the bandsaw blade while grinding.

The moving section houses the motor, the grinding disc, and arms for its suspension. The moving section can be adjusted to grind three different cutting angles: 7°, 10°, and 14°.

The feed mechanism consists of a cam disc and levers. The cam disc is driven by the feed motor on the fixed section. The cam disc actuates the two levers, which in part feed the bandsaw blade forwards and in part lower and lift the grinding disc while grinding.

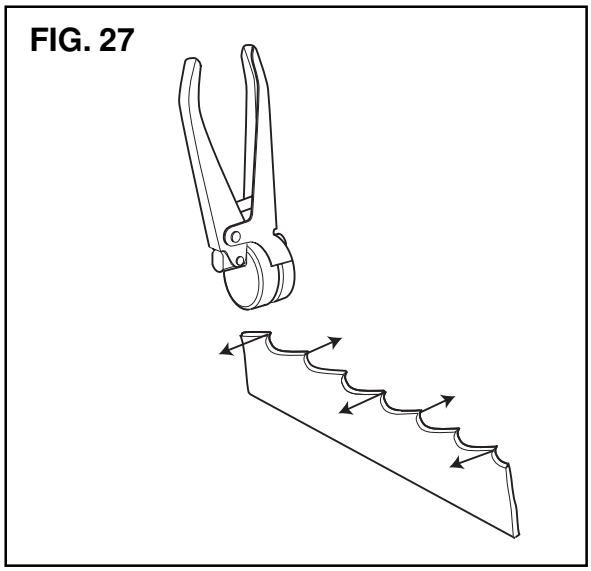
42. Grinding depth adjuster
43. Cutting angle lock
44. Pin for securing the cutting angle
45. Grinder motor
46. Feed mechanism
47. Fixed section
48. Feed mechanism adjuster
49. Feed switch
50. Grinding disc switch
51. Stop pin



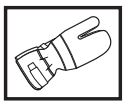
Saw Setting Pliers

On delivery, the saw setting pliers are permanently adjusted to give a set of 0.4-0.5 mm.

FIG. 27



Bandsaw Blade



WARNING!
The bandsaw blade is sharp and can cause cuts. Warning for personal injury. Wear protective gloves whenever you handle the bandsaw blade.

The bandsaw blade should be set and sharpened regularly to give optimal performance. During normal sawing of most species of wood this should be done at intervals of approx. 2 hours of **effective cutting time**. Effective cutting time only refers to the time that the bandsaw blade actually works. The bandsaw blade should be sharpened more frequently when cutting those species of wood with a high sand content.

Dismantling

Dismantle the bandsaw blade as follows:

1. Remove the guards over the band wheels.
2. Loosen the right-hand band wheel by cranking about 10 turns anticlockwise.
3. Carefully remove the bandsaw blade.

Cleaning and Inspection

Clean sawdust and any coating from the bandsaw blade. Now check whether there are any cracks (A) in the gullets. Small cracks can be ground away when sharpening the bandsaw blade. If the cracks are so large that they cannot be ground away, the bandsaw blade should be discarded. Cracks in the gullets are the most common cause of bandsaw blade breakage. The bandsaw blade can be ground to a minimum width of 24 mm. See FIG. 76. A new bandsaw blade is 32 mm wide. The bandsaw blade should be discarded once any part of it reaches the minimum width.

WARNING!
Never use a damaged bandsaw blade.

Setting the Saw

The bandsaw blade's teeth should be set to the dimensions shown in the adjoining figure. Every third tooth should remain unset. The teeth should be set as follows:

B=Set to the right, 0.4-0.5 mm.
C=Set to the left, 0.4-0.5 mm
D=Not set.

The more accurate the set is made, the straighter and smoother the bandsaw blade runs when cutting the log. The bandsaw blade should be set, at a minimum, after every third sharpening.

FIG. 76

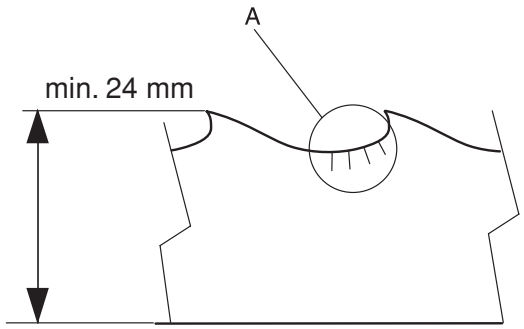
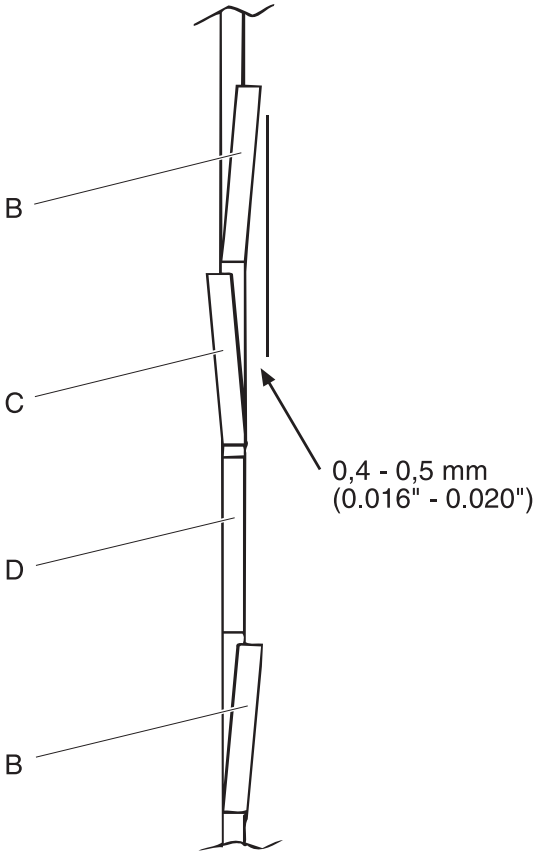
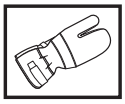


FIG. 77



Saw Setting Pliers

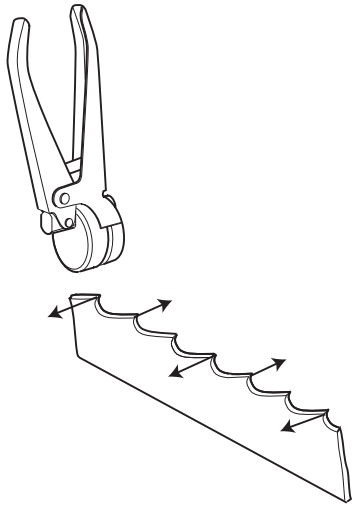


For optimal results, the bandsaw blade should be set using the saw setting pliers as described on page5.
The saw setting pliers are adjusted to the correct setting size.

Place the saw setting pliers over the saw tooth so that the pliers' fixing angles rest on the two closest teeth.

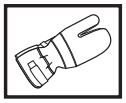
Activate the pliers and the saw tooth will be set away from the operator.

FIG. 78



MAINTENANCE

Sharpening



WARNING!
The bandsaw blade is sharp and can cause cuts. Warning for personal injury. Wear protective gloves whenever you handle the bandsaw blade.

After sharpening, the bandsaw blade should be set as described in the instructions on the previous page.

The more accurate the sharpening, the straighter and smoother the bandsaw blade runs when cutting the log.

Radii
The radius in the area (A) should be 1-3 mm.
A radius under 1 mm increases the risk of cracking.
A radius over 3 mm means that the chips are not broken.

Angles
The clearance angle should be 10-12° and the cutting angle (F) varies depending on the species of wood as follows:

Hardwoods or frozen timber	7°
Medium hardwoods	10°
Softwoods	14°

Before sharpening, the bandsaw blade's teeth should be set using the saw setting pliers.

The rake angle should be 90°. See the figure to the right.

Shape of the Tooth
As the bandsaw blade is sharpened, it is important that the teeth and tooth valleys keep their original shape.

For optimal results, the bandsaw blade should be sharpened with the grinder. The procedure is described on the following pages.

On delivery, the grinder is adjusted for the correct angles and tooth shape.

FIG. 79

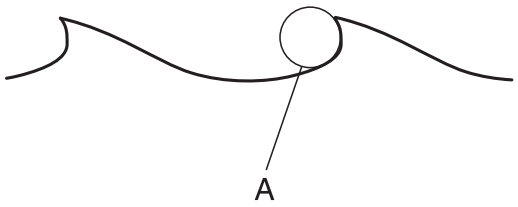


FIG. 80

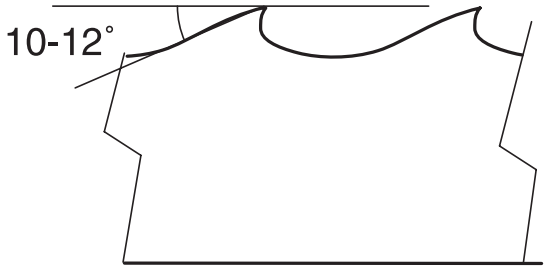


FIG. 81

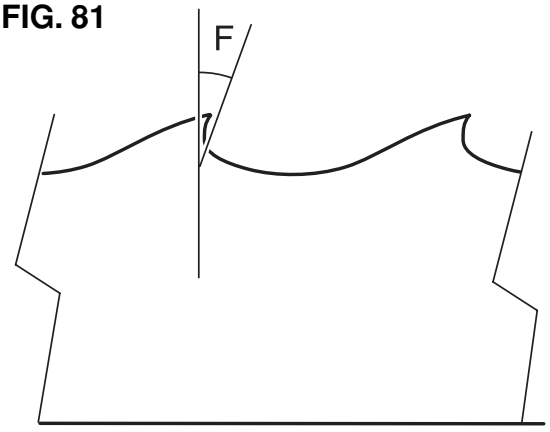
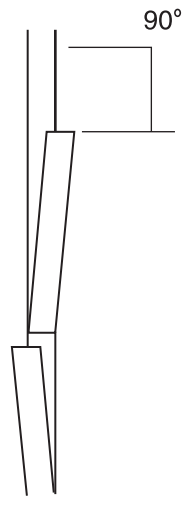


FIG. 82



MAINTENANCE

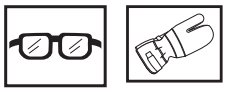
Setting Up the Grinder

WARNING!
Do not store petrol in the vicinity of the grinder. Sparks from the grinding disc or the electrical connection can ignite.

Place the grinder on a table and fold out the support arms. The central support arm can be anchored to the table at G to give a more stable set-up.

Connect the cables to a 12-volt power source. The power source can be a battery or a battery charger.
The red cable is connected to + and the black to -. If the cables are interchanged, the grinding disc and feed motor will run in the wrong direction.

Sharpening with the Grinder



The grinder can be used on bandsaw blades with a pitch of 16 - 32 mm. The grinding disc may need to be redressed for other tooth profiles.

WARNING!
The bandsaw blade is sharp and can cause cuts. Warning for personal injury. Wear protective gloves whenever you handle the bandsaw blade!

1. Loosen the knob (43) and set the correct cutting angle (F). See FIG. 83.
2. Tighten the knob (43).
3. Check that the grinding disc has the correct profile. See the templates at the rear of the binder. The templates can be cut out and placed against the grinding disc.

   CAUTION! A new grinding disc must be shaped before use. Use the supplied whetstone (52).
4. Fold up the grinding motor (45), hold up the feed link (H), and insert the bandsaw blade. The bandsaw blade should lie in the cut-outs in the three support arms.
5. Check that the bandsaw blade rests on the two supports (I). The support arms can be bent if the bandsaw blade does not lie against both the supports.
6. Adjust the bolt (J) so that the bandsaw blade runs freely and at the same time is braced.

FIG. 83

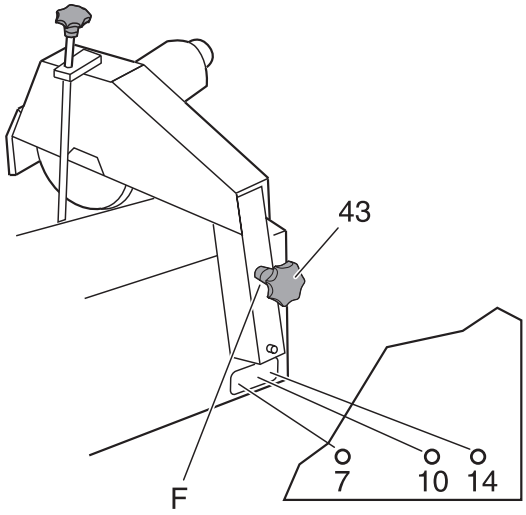


FIG. 84

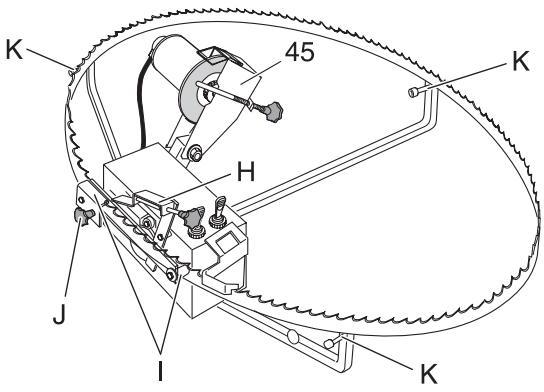
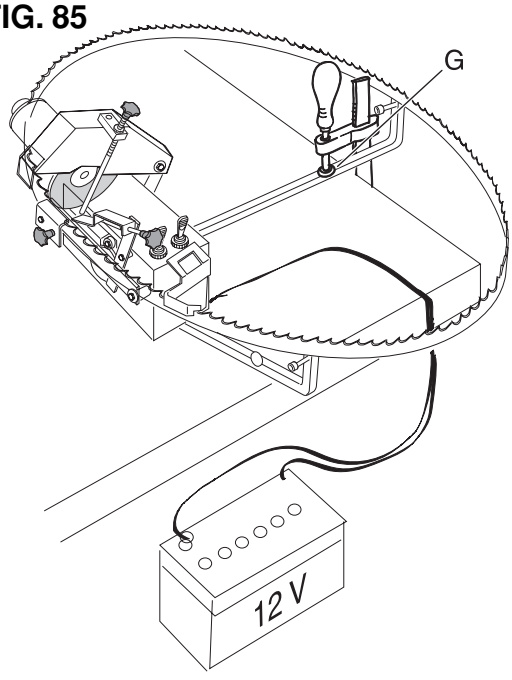


FIG. 85



WARNING!
Risk of the grinding disc coming loose and causing personal injury. Ensure the power supply is connected so that the grinding disc rotates in the right direction, that is, sharpening is performed downwards-backwards.

WARNING!
Risk of damaging the grinding disc or bandsaw blade, which can result in personal injury. The grinding disc must not be running during the procedure set out in points 8-11 below.

7. Start the feed with the power switch (49). The feed cam wheel (K) should rotate anticlockwise. If this is not the case, the connection cables have been interchanged.
8. Stop the feed and check where the grinding disc goes down against the bandsaw blade.
9. Adjust the knob (L) until the grinding disc just touches the inside of the saw tooth (M). Points 7 and 8 above may need to be repeated.
10. Insert the lifter (N) in the appropriate hole in the lever (O) and start the feed. Adjust the knob (P) until the grinding disc just touches the entire tooth valley while fed.
11. Stop the feed and turn both knobs 1/2 turn anticlockwise.

    CAUTION! Do not grind to heavily. This can destroy the hardening of the teeth. Each turn of the adjuster screws corresponds to a grinding depth of 0.75 mm. The maximum grinding depth per sharpening is 0.1-0.2 mm. If the bandsaw blade is very worn, grind several times.

FIG. 86

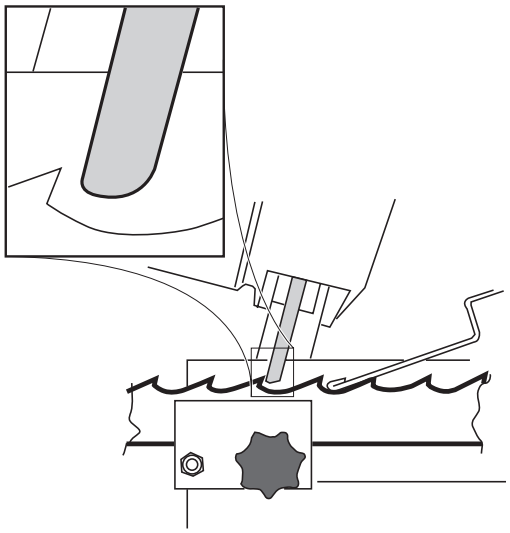


FIG. 87

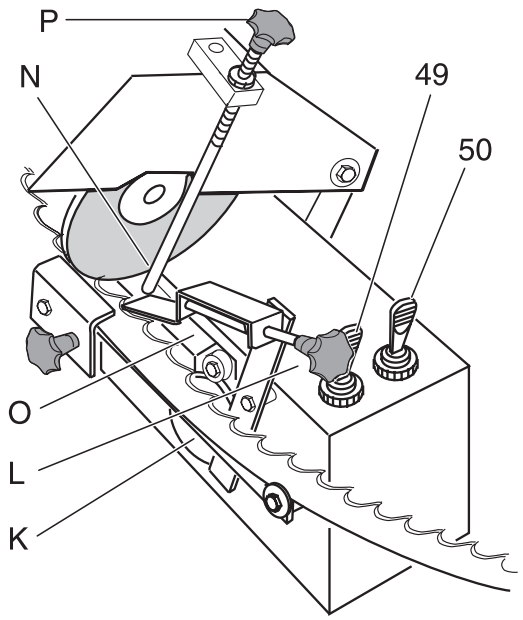
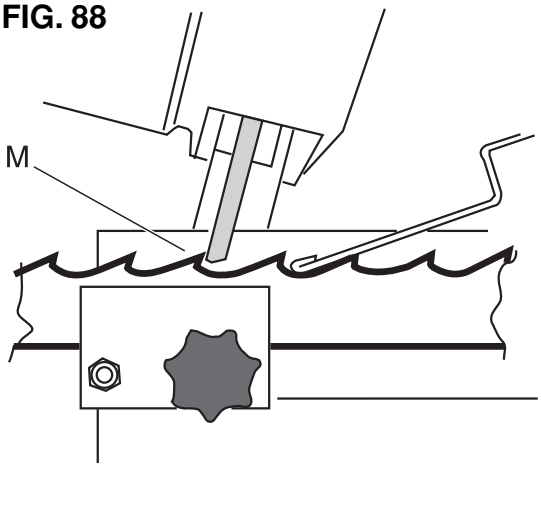


FIG. 88



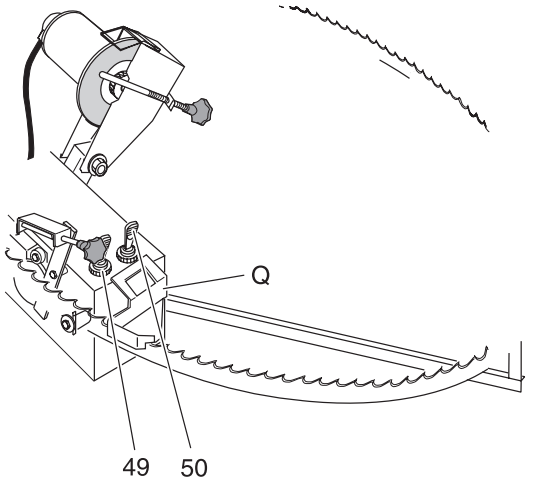
MAINTENANCE

WARNING!
Check that the grinding disc shows no signs of cracking and that it is secured to the spindle. Stop the grinding disc immediately if abnormal vibrations occur.

WARNING!
Wear protective glasses while grinding!

1. Fit the stop pin (Q).
2. Start the grinding disc and feed using the power switches (49 and 50).
3. When the grinder stops automatically, remove the stop pin.
4. Fold up the grinding motor and remove the bandsaw blade.

FIG. 89



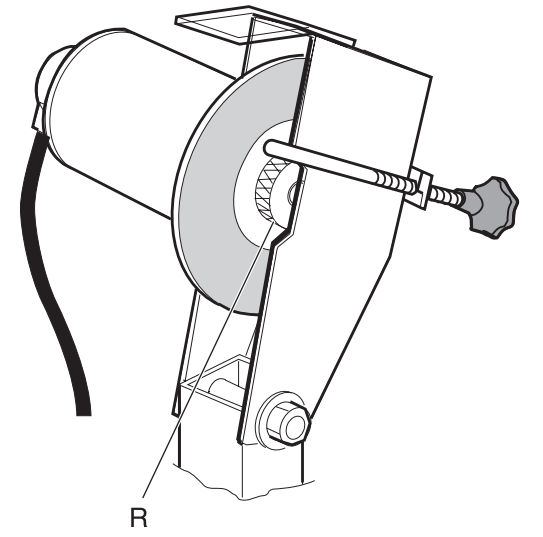
Changing the Grinding Disc

WARNING!
Before changing the grinding disc, disconnect the power supply to the grinder!

1. Fold up the top section of the grinder.
2. Hold the grinding disc and loosen the nut (R) using a pair of pliers.
3. Remove the old grinding disc and fit the new disc. Tighten the nut (R) lightly using a pair of pliers.

Fitting the Bandsaw Blade
Fit the bandsaw blade on the one-man sawmill according to the instructions in the operator´s manual for the one-man sawmill.

FIG. 90



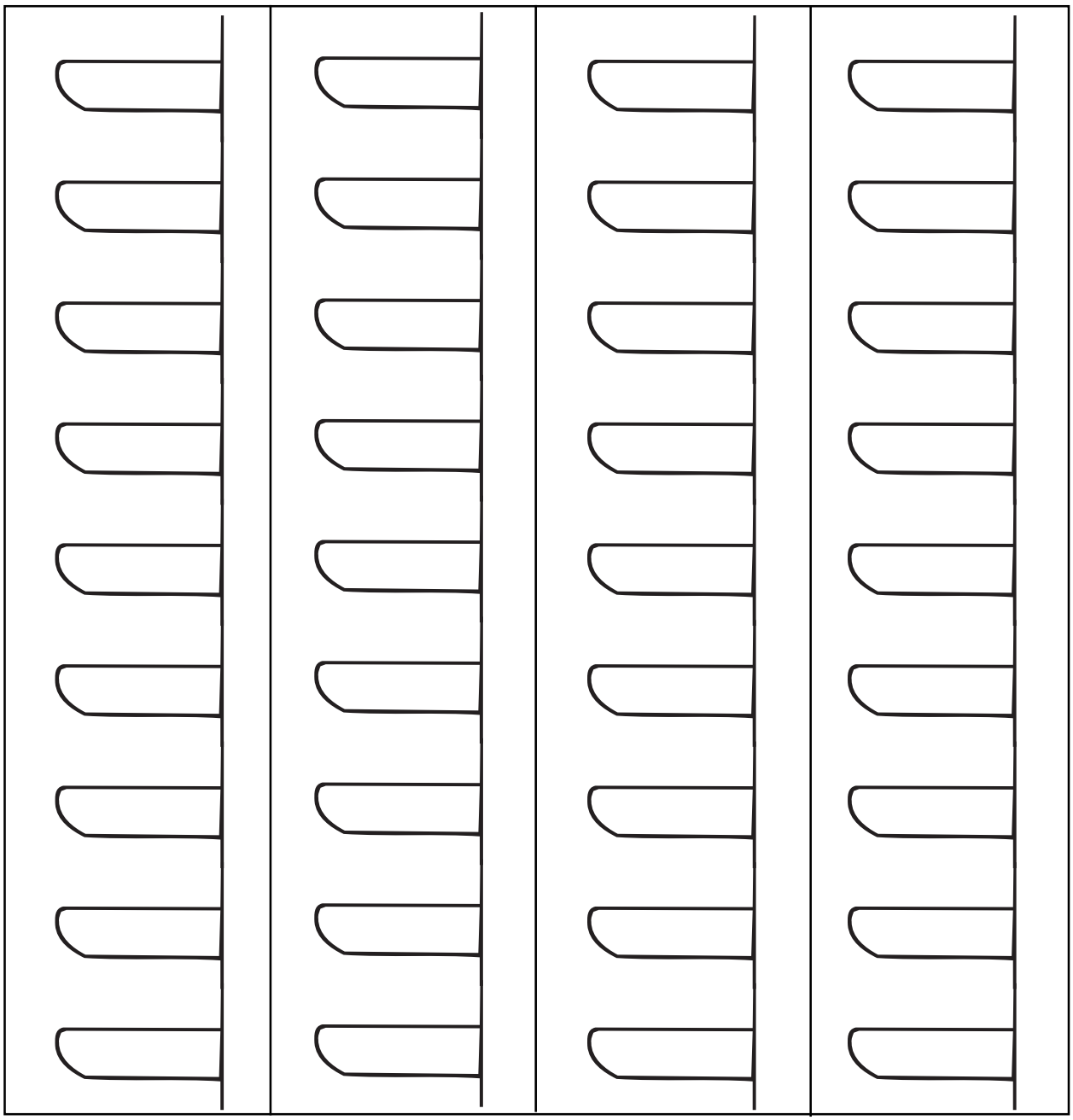
TECHNICAL DATA

Motor Data, Grindlux 4000

Grinder motor

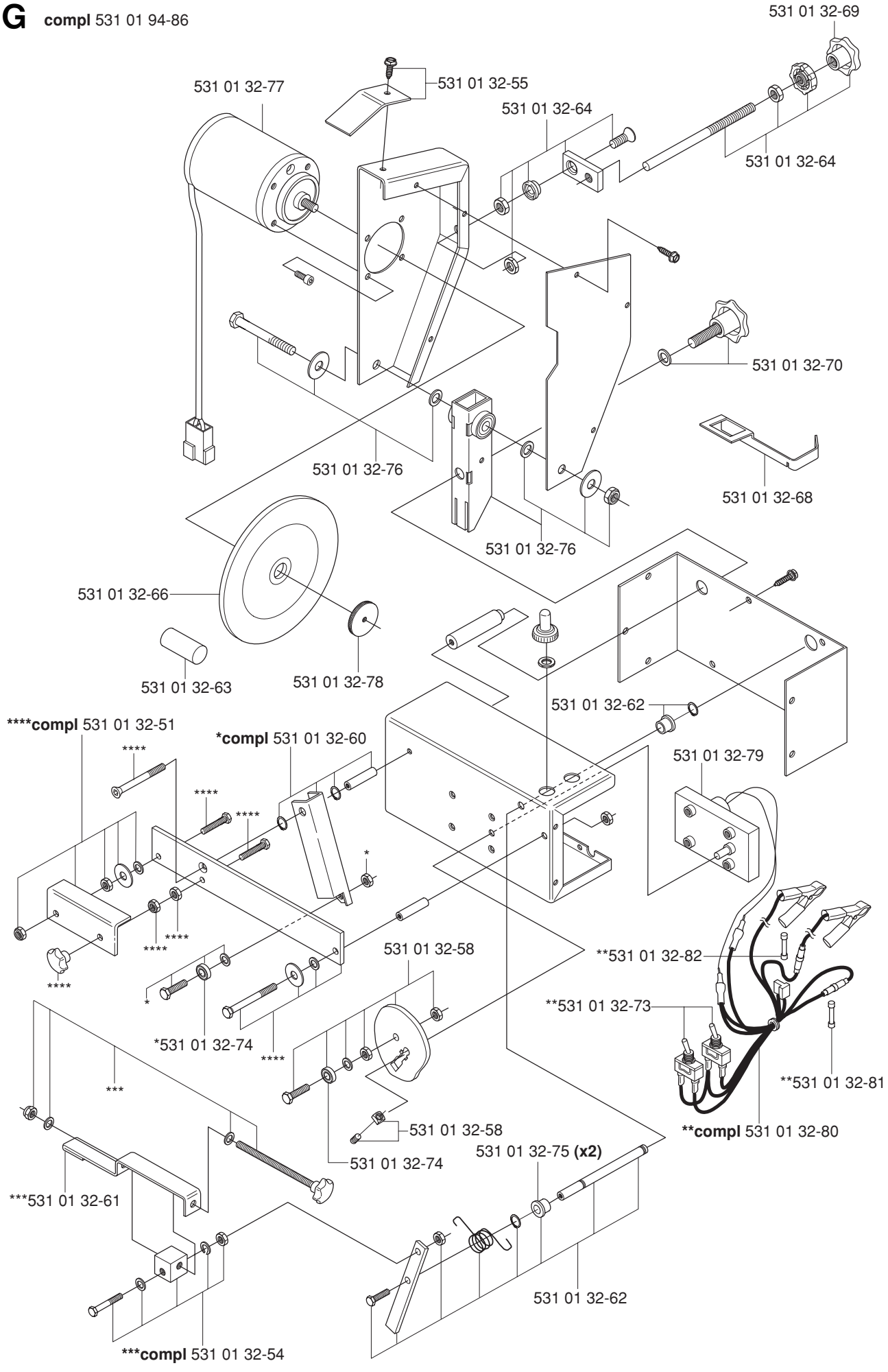
Voltage, V:	12
Speed, rpm:	2800
Peripheral speed, m/s:	22
Power, W:	90
Amperage, A:	7.5
Grinding disc, mm:	150x6x16 (531 01 32-66)
Fuse, A:	12 / 0.25
Weight, kg:	8.24
Whetstone:	531 01 32-63

Templates for Dressing the Grinding Disc

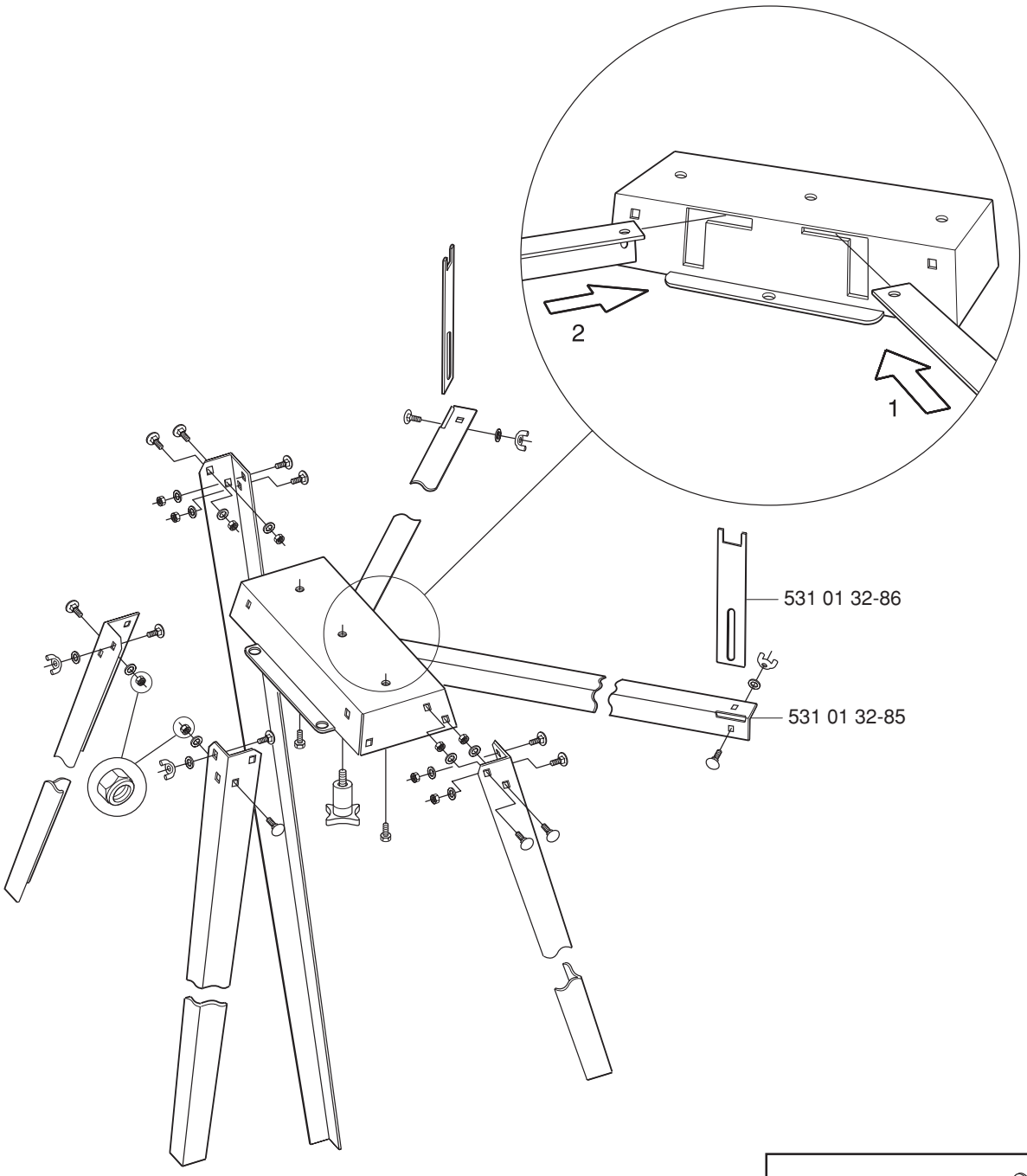


PART NUMBER	SQUARE NOTE	PART NUMBER	SQUARE NOTE	PART NUMBER	SQUARE NOTE	PART NUMBER	SQUARE NOTE
503 23 00-31	H						
531 01 32-51	G						
531 01 32-54	G						
531 01 32-55	G						
531 01 32-58	G						
531 01 32-58	G						
531 01 32-60	G						
531 01 32-61	G						
531 01 32-62	G						
531 01 32-62	G						
531 01 32-63	G						
531 01 32-64	G						
531 01 32-64	G						
531 01 32-66	G						
531 01 32-68	G						
531 01 32-69	G						
531 01 32-70	G						
531 01 32-73	G						
531 01 32-74	G						
531 01 32-74	G						
531 01 32-75	G						
531 01 32-76	G						
531 01 32-76	G						
531 01 32-77	G						
531 01 32-78	G						
531 01 32-79	G						
531 01 32-80	G						
531 01 32-81	G						
531 01 32-82	G						
531 01 32-84	H						
531 01 32-85	H						
531 01 32-86	H						
531 01 32-87	H						
531 01 32-88	H						
531 01 32-89	H						
531 01 94-86	G						
725 23 68-51	H						
731 23 14-01	H						
732 21 14-01	H						

G **compl** 531 01 94-86



H **compl** 531 01 32-84



531 01 32-87 **(x14)**

503 23 00-31 **(x16)**

725 23 68-51 **(x3)**

731 23 14-01 **(x8)**

732 21 14-01 **(x2)**

531 01 32-88 **(x4)**

531 01 32-89

114 01 13-26

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